**MT29 Abstracts and Technical Program** 



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## Fri-Af-Po.10-04: R&D of cryogen-free 2G-HTS wiggler in NSRRC

Friday 4 July 2025 14:00 (2 hours)

This paper presents the development of a cryogen-free 2G High-Temperature Superconducting (HTS) wiggler for use at the National Synchrotron Radiation Research Center (NSRRC). The proposed design leverages the advanced properties of 2G-HTS materials to provide magnetic fields around 2.7 T. The wiggler utilizes modified double pancake winding techniques for the HTS coils. This method doesn't need soldering connection between each poles. The choose of cryogen-free design eliminates the need for liquid helium, simplifying maintenance. The paper details the mechanical design, magnetic field simulation, tape winding methodology, and integration of the HTS wiggler into the NSRRC's advanced synchrotron systems.

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